primary studies - published RCT

Inhaled versus systemic antibiotics and airway inflammation in children with cystic fibrosis and Pseudomonas.

Code: PM20146365 **Year:** 2010 **Date:** 2010 **Author:** Noah TL

Study design (if review, criteria of inclusion for studies)

RCT

Participants

Clinically stable CF children with recent Pseudomonas. N=15

Interventions

4 weeks of inhaled tobramycin or 2 weeks of systemic antibiotics (intravenous ceftazidime and tobramycin).

Outcome measures

Bronchoalveolar lavage fluid was obtained just before and 4-6 weeks after treatment. The primary outcome was change in % neutrophils in lavage fluid.

Main results

Fifteen subjects (inhaled = 6, systemic = 9) completed the protocol. Three Systemic Group subjects could not have central venous access established and were treated with oral ciprofloxacin (plus inhaled tobramycin) for 2 weeks as an alternative "systemic" regimen, per protocol. Groups were well matched in age, markers of disease severity, and initial % neutrophils. The Systemic Group showed a modest median change in percent neutrophils (-7%) which was not statistically significant compared to inhaled (+5.4%, P = 0.07). However, the Systemic Group had significantly greater reductions in total cells (-50% vs. -3%, P

Authors' conclusions

In clinically stable children with CF, systemic antibiotics result in greater short-term reduction in lower airways inflammation than inhaled antibiotics.

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See also

Pediatr Pulmonol. 2010 Mar;45(3):281-90.

Keywords

Anti-Bacterial Agents; Bacterial Infections; Child; Infant; Infection; Inhalation OR nebulised; Intravenous; pharmacological_intervention; Pneumonia; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Ceftazidime; Tobramycin; Cephalosporins; Aminoglycosides;